Video Telemedicine with Computer Interface and Stroke Consultation

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ABSTRACT

Stroke is the leading cause of disability and the third leading cause of death in the United States. Urgent stroke management is constrained by a 3 hour window for treatment with intravenous recombinant tissue plasminogen activator (IV rt-PA), the "brain saving" drug. Using IV rt-PA requires a rapid and organized approach. Telemedicine technology can provide immediate assessment and consultation by stroke experts. This study seeks to establish the feasibility of telemedicine consultation in the diagnosis of stroke, by validating a telemedicine procedure within the critical time frame.

Telemedicine evaluation of the neurological examination, consisting of the National Institutes of Health Stroke Scale, a set of standardized patient history questions and brain CTs, prompted by a MS-ACCESS database "front-end" data presentation on screen simultaneously to a PictureTel PT680 video teleconference (VTC). Ten simulated patient encounters will be captured and assessed as timed evaluations focusing on the uniformity of provider consultation. The VTC units use the H.320 protocol allowing for remote camera control. DICOM data is transmitted securely through a VPN connection using a SOHO Router and point-to-point tunneling protocol.

The ability to provide immediate expert consultation on patients will improve the quality of life of stroke patients and reduce healthcare expenses.